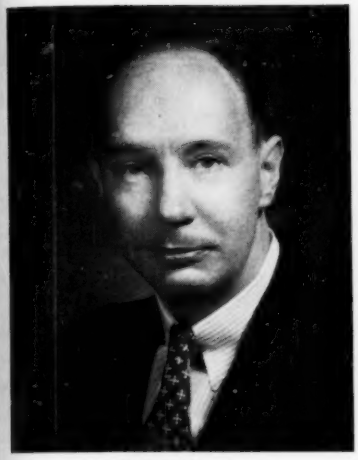
Uhlig and Logan Receive NACE Awards



H. H. Uhlig

The National Association of Corrosion Engineers has named H. H. Uhlig, in charge of the Corrosion Laboratory at Massachusetts Institute of Technology, Cambridge, Massachusetts, as the recipient of its 1951 Whitney Award, and Kirk H. Logan, Research Engineer of the Cast Iron Pipe Research Association, Washington, D. C., winner of the Speller Award for 1951. Both men have had wide experience in the field of corrosion research and have contributed much to developments of practical and economic value.

The awards were first established in 1947 by NACE. The Whitney Award was named for Willis Rodney Whitney, its first recipient, and is given for achievement in the field of corrosion science. The Speller Award, named for Frank Newman Speller, who was the first to receive it, is for achievement in the work of corrosion engineering. Winners are chosen each year by nominations made by the Awards, Certificates, and Fellowship Committee, with approval by the board of directors.

The formal presentation of the 1951 awards was made at the annual dinner of the association, held on March 15th, at the Hotel Statler in New York City.

Dr. Herbert H. Uhlig has been active in a large number of scientific projects, with particular interest in corrosion, since the beginning of his professional career. In addition to his current work at M.I.T. he edited the *Corrosion Handbook* in 1948, and for the past two years served as editor of the Journal of The Electrochemical Society. He is on the board of directors of the Society, is chairman of the Theoretical Division, and past chairman of the Corrosion Division. He has also served as chairman of the annual AAAS Corrosion Conference, has been active in the National Society of Corrosion Engineers, and is a member of other leading scientific societies.

Trained as a physical chemist, Dr. Uhlig received the B.Sc. degree from Brown University and the Ph.D. degree from Massachusetts Institute of Technology. He began his work on corrosion at the latter institute in 1936 as a research associate in the Corrosion Laboratory. In 1940 he joined the staff of the Research Laboratory of General Electric Company in Schenectady, where he continued his researches in the corrosion field and on the properties of metals. In 1946 he returned to M.I.T. as Associate Professor of Metallurgy in charge of the Corrosion Laboratory.

Dr. Uhlig's chief fields of interest have been the mechanisms of corrosion reactions and fundamental electrochemistry, including the nature of passivity and the chemical and metallurgical behavior of corrosion resistant alloys.

Kirk H. Logan, named to receive the Speller Award, was graduated from Kansas University in 1902 and later taught physics at Bradley Institute, Peoria, Illinois. In the years following

Kirk H. Logan

he became a student engineer at the Lynn Works of General Electric Company, traffic engineer for the New York Telephone Company, and taught physics at Kansas A. & M. College. During this period he did graduate work at several schools, receiving his M.S. degree from Kansas State College in 1913.

In 1911 Mr. Logan joined the National Bureau of Standards and worked on electrolysis problems until 1922. He then organized and directed the Bureau's investigations in underground corrosion, continuing this work until 1944. He wrote numerous papers on corrosion during this time, among the more notable being the final report of The American Petroleum Institute's study on pipe coatings, and "Soil Corrosion," which summarizes the underground corrosion work of the NBS.

In his current work as research engineer of the Cast Iron Pipe Research Association, Mr. Logan is continuing his experiments on methods of corrosion prevention.

New Atomic Plant in Colorado

An atomic production plant, costing $45,000,000 is to be built at Boulder, Colorado, near the University of Colorado, according to an announcement by the Atomic Energy Commission. Construction is to begin at once and at its peak early next year will require 2,000 workers. Because of security regulations, no description of the operation was made public.

The Dow Chemical Company of Midland, Michigan, will operate the plant which is expected to employ about 1,000 persons. A statement from the Dow Company said that they had been asked to take the assignment because of scientific and manufacturing experience along the lines needed for the project.

Dr. L. A. Matheson of Dow's physical research laboratory has been named technical director of the new plant along with such other key personnel as may be required. F. H. Langell of chemical engineering at Dow will manage the plant. David W. Persons of AEC's Los Alamos plant will be transferred to the Colorado installation as project engineer.

The AEC said it has acquired 2,500 acres of land for the project and the reasons for the choice of the site included availability of water and power, lack of vulnerability to military attack, and existing housing and transportation facilities. Also proximity to colleges and universities was said to be an important factor.

Alabama Chlorine Plant for Mathieson

Mathieson Alabama Chemical Corporation, a new, wholly owned subsidiary of Mathieson Chemical Corporation, will build a chlorine and caustic soda plant near Mobile, Alabama, it has been announced.

The new plant will be located on a 500 to 1000-acre site at McIntosh, about 40 miles north of Mobile. The company plans to utilize salt from the McIntosh Salt Dome to supply salt brine, a necessary raw material for the manufacture of chlorine and caustic soda. The plant is the first development by Mathieson in this area and the products are for consumption in the Gulf Coast region where defense demands for these chemicals have increased considerably. The plant is expected to be in operation by early 1952.

Young Author's and Turner Book Prizes

The annual award of the $100 Young Author's prize was made at the Society banquet on Tuesday evening, April 10th, to George W. Murphy of the University of Wisconsin in Madison. Dr. Murphy's paper, "The Separation of Simple Electrolytes in Solution by an Electro-Gravitational Method," appeared in the November 1950 issue of the JOURNAL.

The Turner Book Prize, consisting of $50 worth of books from the Reinhold Publishing Company, was presented to Dr. Paul Delahay, Louisiana State University, for Parts I and II of his paper, "A Polarographic Method for the Indirect Determination of Polarization Curves for Oxygen Reduction on Various Metals," which appeared in the June 1950 JOURNAL.

SECTION NEWS

Philadelphia Section

The Philadelphia Section met jointly with the Philadelphia Electroplaters' Society on March 7th, in the Harrison Laboratory, University of Pennsylvania. A dinner at the Lenape Club in honor of the speaker, Society President Charles A. Faust, preceded the meeting. Forty members and guests attended the dinner and sixty-six attended the technical meeting.

Dr. Faust, in reporting on his work at Battelle Memorial Institute, chose as his subject "Chemical and Electrochemical Smoothing," and discussed the promising techniques of polishing of metals by electrochemical methods.

Of the three nonmechanical methods for polishing metals, chemical, electrodeposition, and electroremoval, the latter two show many unique advantages that open new fields in metal finishing inaccessible to any mechanical technique. These benefits of electropolishing derive from the fact that in the absence of any mechanical work done on the surface of the metal, such effects of abrasion as smearing, tearing, heating, and crystal distortion are eliminated. Thus the electropolished surface is as free from strains as the base metal, it has a structure that is characteristic of the body of the metal, and it is free from contamination from abrasive. This results in greatly increased adhesive strength of any subsequent metal plate. There are methods like honing and other light abrasive actions that can be used to achieve similar results, but they are tedious and expensive and not always applicable in the case of special shapes.

J. F. HAZEL, *Secretary*

Chicago Section

A most enlightening lecture on a number of the more pertinent me lurgical aspects of electrochemistry wa presented by Dr. Charles L. Faust, President of The Electrochemical Society, at the March 2nd meeting of the Chicago Section. An abstract of a similar talk by Dr. Faust appears above in the Philadelphia Section news.

J. H. CONOLLY, *Secretar*

Detroit Section

The Detroit Section held its first dinner meeting of the current season on March 9th at Wayne University, Detroit. Members and their guests were addressed by Mr. M. B. Hammond of the Standard Steel Spring Company, Coraopolis, Pennsylvania, the after-dinner speaker, on the timely subject "The Rise of a World Power."

Mr. F. L. LaQue of the International Nickel Company, Incorporated, New York, presented the technical address on a subject important to all electrochemists: "Potential Measurements in Corrosion and Cathodic Protection." Mr. LaQue is an outstanding worker in this field and well qualified to present the latest and most authoritative data on the subject. His talk was received with keen interest by all.

A. W. LINN, *Secretary-Treasurer*

Midland Section

Dr. Charles L. Faust of Battelle Memorial Institute, Columbus, Ohio, was the guest speaker at the February 21st meeting of the Midland Section. He was introduced by Dr. Ralph M. Hunter, Manager of The Dow Chemical Company's Electrochemical Division and President-elect of The Electrochemical Society for 1951–52.

Dr. Faust spoke on "Some Metallurgical Aspects of Electrochemistry." In his talk the importance of the surface condition of a metal before electroplating was stressed. He compared chemical, physical, and mechanical methods of cleaning a surface.

Further highlights of this subject are given in the more detailed review in the Philadelphia Section.

A motion picture in color, "Green Timber," was first on the program.

Earlier in the evening a group of

Midland Section members attended a dinner with Dr. Faust and Dr. Hunter at the Midland Country Club.

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Dr. Mars G. Fontana of the Ohio State University was the guest speaker at the March 23rd meeting of the Midland Section. He spoke on "New Developments in Corrosion Resistant Metals and Alloys," covering post World War II developments in this field.

In this discussion, Dr. Fontana included a variety of stainless steels, nickel steels, titanium, and copper-tellurium.

The talk was followed by an interesting discussion period.

The meeting took place in The Dow Auditorium and was preceded by the showing of a motion picture, "Crossroads for America."

H. H. Roth, *Secretary-Treasurer*

New York Metropolitan Section

Dr. Waldemar B. Kaempffert, Science Editor of *The New York Times*, gave the Metropolitan Section, on February 28th, a very enlightening talk on a science reporter's and an editorial writer's approach to "What is News," "How to Get Accurate Science News," and "How to Get the Science News Across to the Public."

He traced the rapid growth of public and newspaper publishers' interest in science news. For example, when Darwin's "The Origin of Species" was published, it rated only a book review in *The New York Times* despite its terrific impact on science and religion. It required 13 years for Einstein's "Theory of Relativity" to become newsworthy. Today such important events would not go unnoticed. This is partly due to the atomic bomb and also to a general increased interest in more fundamental science. There is still a long way to go when we consider that *The New York Times* is the only newspaper with a science editorial staff, which consists of Dr. Kaempffert, Dr. Lawrence, and a new assistant, as compared to a sports department of 48. Incidentally most other newspapers get their science news through the Associated Press and other such services.

The trend toward secrecy in the physical sciences is disturbing to Dr. Kaempffert, as it is detrimental to the growth of science and usually protects ignorance. He feels that the press can do a lot for science and that acknowledgment of this relationship is of considerable benefit to all.

The American Chemical Society's public relations staff is of great help in providing accurate science news. Another excellent source is the public relations (publicity agents to us) staffs of the universities. Medical ethics make M.D.'s rather difficult as a source, but since many discoveries of medical importance are now made by inorganic and biochemists, who are not hampered by an outmoded code of "medical ethics," science writers go to them for news. It is impossible to read all the scientific journals, so generally a brief review of the contents is made, anything of interest studied and catalogued, and filed.

In conclusion, Dr. Kaempffert expressed the hope that the time would come when a whole page of *The New York Times* would be devoted to science news daily. We hope so too, Dr. Kaempffert.

The above talk was preceded by a short business meeting conducted by Chairman Copson. Plans for a Ladies' Night in May were discussed as well as other meeting arrangements.

J. S. Mackay, *Vice-Chairman*

Washington-Baltimore Section

Dr. George W. Vinal, retired Chief of the Electrochemistry Section, National Bureau of Standards, addressed the Washington-Baltimore Section on "The Historical Background of the Development of Modern Batteries" at the March 15th meeting.

Dr. Vinal cited what may have been the first use of batteries, the remains of a copper-iron couple found in Bagdad that was possibly used as a battery 2000 years ago. It was not until 1800, when Volta made his epic-making discovery of the voltaic pile, that the first real electric battery was made. This method of producing electricity for the first time made it possible to manage electricity and really study its many uses. With such a cell, Sir Humphrey Davy first decomposed "fixed alkalis" and built enough cells to produce a high-voltage electric arc. Cruickshank, using Volta's principle, soldered zinc and copper plates back-to-back to form what we now call duplex electrodes.

It was Faraday, the speaker said, who first proved that forms of electricity, whatever their sources, were identical in nature. From these findings came the well-known Faraday's laws of electrochemical action which form the basis of modern electrochemistry

During the early 19th Century most of the batteries studied were based on the same principle as Volta's pile. Daniell, however, in 1836, described a cell in which polarization was reduced by using the hollow gullet of an ox as a means of separating a dilute solution of sulfuric acid in which a zinc rod was immersed from a saturated solution of copper sulfate surrounding a copper cylinder. Of particular importance in the next quarter of the century was the work of Grove who in 1839 used a platinum electrode in nitric acid and zinc in hydrochloric or sulfuric acid. In 1842, Bunsen made a similar cell but substituted carbon for platinum. In the meantime Silliman at Yale had substituted plumbago for the platinum. Around the middle of the 19th Century, mercury cells first came into use as did the silver chloride battery which is best known by the work of De la Rue. Another cell which was important at that time was Poggendorf's which is similar to the Bunsen cell except that only one fluid was used, a bichromate solution in sulfuric acid.

Planté, in 1860, invented the first practical storage battery. Faure in France and Brush in the United States were the first to use cast grids with pasted active material: the use of such plates with wood or rubber separators forms the basis of present day lead-acid storage batteries.

Another important discovery during this time was Leclanché's now familiar dry cell using manganese dioxide as a depolarizer, zinc as the anode and ammonium chloride as the electrolyte. In 1868, 20,000 of these cells were in use on railroad and telegraph lines. Air depolarization in this cell was recognized by Leclanché since he was particular to see that his jar was only half full of electrolyte so that his depolarizing mix was not completely wet. However, air had been found to have some depolarizing action even as far back as Wollaston's trough battery of 1815. The Lalande cell, consisting of copper oxide–zinc–caustic soda was developed in 1881, was later modified by Edison, and now enjoys wide use in railway signaling.

At the turn of the century Edison invented the nickel-iron alkaline storage battery about the same time that Junger invented the nickel-cadmium alkaline storage battery in Europe. These batteries have found considerable use in a number of special applications.

It was clearly evident from Dr. Vinal's talk, which was well illustrated

by many interesting slides, that essentially all of our modern day batteries, both primary and secondary, are simply modifications and improvements of cells from fifty to one hundred years old.

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Election of officers for the coming year also took place at this meeting and the following slate was chosen:

Chairman—Abner Brenner
Vice-Chairman—R. S. Dean
Secretary-Treasurer—J. C. White

J. C. White, *Secretary-Treasurer*

PERSONALS

Martin H. Johnson of the Ray-O-Vac Company, Madison, Wisconsin, has been transferred to the company's offices at Salem, Oregon.

Herbert B. Williams recently accepted a position as Superintendent of Development at the National Distillers Chemical Corporation, Ashtabula, Ohio. The plant produces sodium and sodium products. Mr. Williams was formerly with the Du Pont Company at Niagara Falls.

Dennis R. Turner, who has been on the Chemical Department staff of Westinghouse Laboratories, East Pittsburgh, Pennsylvania, is now in the Electroplating Products Laboratory, Westinghouse Electric Corporation, in East Pittsburgh.

Daniel A. Hill has left the Ohio Edison Company, Cleveland, Ohio, to accept a position as Electric Power Consultant for the National Advisory Committee for Aeronautics with headquarters in Cleveland. The NACA has additional laboratories at Langley Field, Virginia, and Moffett Field, California, and plans to increase its service considerably in the next three years.

Mogens E. Christiansen has been named Eastern Manager of General Dry Batteries, Incorporated, with headquarters at 521 Fifth Avenue, New York City. Mr. Christiansen was previously located at the company's Cleveland office. In his new position he will have charge of the East Coast sales and other activities in this area.

Alvin F. Garcia was recently promoted from Reduction Plant Superintendent of the Mead Works, Kaiser Aluminum & Chemical Corporation, Spokane, Washington, to Plant Manager of the company's Tacoma Plant at Tacoma, Washington.

W. J. Kroll, Consulting Metallurgist, is now located at Corvallis, Oregon, having recently moved from Albany, Oregon.

Raymond B. Hoxeng, formerly of the Department of Chemistry, Case Institute of Technology, Cleveland, Ohio, has joined the staff of the U. S. Steel Research Laboratory, Pittsburgh, Pennsylvania, as a research associate, directing various phases of corrosion research.

NEW MEMBERS

In March 1951 the following were elected to membership in The Electrochemical Society:

Active Members

Charles K. Aldrich, American Cyanamid Company, mailing add: Buttzville, New Jersey (Corrosion)

Otto H. Bauer, Bowers Battery & Spark Plug Company, mailing add: 226 No. 4th Avenue, Highland Park, New Jersey (Battery)

Francis J. Bowen, Division of Metallurgical Research, Kaiser Aluminum & Chemical Corporation, P.O. Box 1451, Spokane 6, Washington (Corrosion)

Michael Carosella, Union Carbide & Carbon Corporation, mailing add: 517 82nd Street, Niagara Falls, New York (Electrodeposition)

Robert F. Cree, Harrison Laboratory of Chemistry, University of Pennsylvania, Philadelphia 4, Pennsylvania (Electronics and Industrial Electrolytic)

James Emlen, Whitemarsh Laboratories, P. O. Box 4388, Chestnut Hill, Philadelphia 18, Pennsylvania (Theoretical Electrochemistry)

Ernest C. Evers, University of Pennsylvania, Dept. of Chemical Engineering, Philadelphia 4, Pennsylvania (Theoretical Electrochemistry)

Gerard M. Foley, Leeds & Northrup Company, 4901 Stenton Avenue, Philadelphia 44, Pennsylvania (Electronics)

Russell E. Gackenbach, Calco Chemical Division, American Cyanamid Company, Bound Brook, New Jersey (Corrosion)

Frederick J. Holzapfel, Monsanto Chemical Company, mailing add: 8700 White Avenue, Brentwood 17, Missouri (Industrial Electrolytic)

Lewis J. Kleckner, Raymer Pharmacal Company, mailing add: 1226 S. 57th Street, Philadelphia 43, Pennsylvania (Theoretical Electrochemistry)

Reinstatement

N. A. Tope, The Montgomery Plating Co., Ltd., mailing add: 80, Middle March Road, Coventry, Warwicks, England (Corrosion, Electrodeposition, Electro-Organic, and Theoretical Electrochemistry)

Associate Member

James G. Bickel, Lansdale Tube Company, mailing add: 37 Second Street, Catasauqua, Pennsylvania (Electronics)

BOOK REVIEWS

Selenium, Gmelin's Handbuch der Anorganischen Chemie, 8. Auflage, System Nummer 10, Teil A-Lieferung 2, "Die Elektrischen Eigenschaften (Mit Selenphotowiderstand)." Published by Verlag Chemie, Berlin, 1950. 122 pages, price DM 28.

This book presents a partial resumé of the electrical and photoelectrical properties of selenium as recorded in the literature from the time of the discovery of selenium (last half of the 19th Century) down to the middle of 1949. The procedure used is to present each type of phenomenon giving the general results and quantitative behavior, together with references to the literature.

The matter is presented in three main groups, namely: (*a*) General electrical properties such as dielectric constant, piezoelectric effect, frictional and contact electricity, thermoelectromotive force against various metals, etc. (*b*) Electrical conductivity of various selenium modifications, and the photoconductivity of numerous cell constructions. This forms the main body of the work. The various effects of light, temperature, pressure, voltage, etc., on conductivity, together with measurements on fatigue, lag and aging are treated in great detail. (*c*) Descriptions of the various types of photoconductive cell construction and sensitization, together with an evaluation of the advantages and disadvantages of each, are given.

As investigators in the field of semi-

conductors are well aware, there is much discordance and contradiction in the experimental results in this field, and the publication under review presents these frequent contradictions in an objective manner. The main emphasis is on experimental results and simple physical pictures to correlate them. There is very little discussion of the modern theories of electrical conduction as affected by impurities, crystal structure, temperature, and radiation, although references are given to some of these treatises.

The multitudinous uses of selenium photocells and rectifiers in scientific and technical applications are not discussed. Moreover, the phenomena of rectification and of photovoltaic currents are not discussed at all. It is to be expected that these will receive adequate treatment in the forthcoming Teil A-Lieferung 3.

The matter presented in this publication should be of great use to the experimentalist in the field of semiconductors. It will guide him in an adequate understanding of the response of selenium to various electrical and radiation stimuli as affected by the various processing treatments to which the element has been subjected. The theoretical physicist should find a wealth of experimental results to guide him in formulating and evaluating suitable theories of the fundamental processes underlying the complicated behavior of selenium.

C. W. Hewlett

The Polarographic Method of Analysis by O. H. Müller, 2nd edition, Chemical Education Publishing Company, Easton, Pa., 1951. 209 pages, $3.50.

The first edition of this book was composed of five articles which originally appeared in *The Journal of Chemical Education* in 1941. The articles were designed to orient the reader by showing the relationship of polarography to potentiometry and conductivity. The present edition contains the original five articles in a revised and somewhat expanded form, and in addition, chapters on such subjects as "recent developments," "applications," and "suggestions for practical polarography."

The experiments, designed to illustrate the fundamental principles and techniques, have been increased but not to an excessive degree. An index has been added to the present edition as well as a brief appendix devoted almost entirely to buffer solutions. Despite the fact that the book has been doubled in size, the author has maintained his goal of presenting clearly and concisely the principles of polarography.

The chief criticism that one can make regarding the book is a general one: the author has failed to refer to articles which appeared later than those which he wrote on two different aspects of polarography. In one instance, the author referred the reader to one of his bibliographies which was published in 1939 on organic polarography despite the fact that there have been at least two later articles by other authors. Similarly, on the subject of rotating solid electrodes, he indicated only that automatic recording should be feasible whereas articles appeared more than three years ago in the Russian and the American literature on this subject. However, these omissions will not prove serious to the beginner who wishes only an introduction to the subject.

Another misleading omission was noted in the derivation of equations for the polarographic halfwave potential where references to the well-known work of German and American polarographers, who independently derived the equations in 1939, was mentioned only as an afterthought in relation to a minor point at the end of the derivation.

This book stands alone in presenting a concise treatment of polarography together with simple illustrative experiments. It should prove to be useful not only to persons who are unfamiliar with polarography but also to those who are familiar with it and wish to broaden their appreciation of the technique.

L. B. Rogers

MEETINGS OF OTHER ORGANIZATIONS

National Fire Protection Association, annual meeting, Hotel Statler, Detroit, Michigan, May 7–11.

Edison Electric Institute, 19th annual convention, Denver, Colorado, June 4–7.

American Gas Association, production and chemical conference, Hotel New Yorker, May 14–16.

American Society of Refrigerating Engineers, 38th spring meeting, Hotel Statler, Detroit, Michigan, May 27–30.

American Society for Testing Materials, annual meeting, Chalfonte-Haddon Hall, Atlantic City, June 18–22.

NOTES FROM INDUSTRY

Products

Liston-Folb Instrument Company, Incorporated, Stamford, Connecticut, is offering the Ultra-Sensitive General-Motors Synchronous-Breaker type d-c Amplifier whose sensitivity extends down into the range immediately adjacent to Johnson Noise, the "noise" resulting from the random motion of electrons in the circuits. Originally developed by General Motors Corporation, the present advanced models are used for studies in such fields as chemotherapy, seismology, spectroscopy, oceanography, meteorology, and petroleum exploration. The amplifier exhibits stability in both Zero Reading and Gain in the order of 0.005 microvolt and 0.3 per cent, respectively, over periods of 8 hours or more. Detailed figures on input, output, stability, controls, etc., sent on request.

Stratford Company, Dept. C, 207 Bay Street, Bridgeport, Connecticut, has announced the development of a new stripping process for removing metal coatings. It is stated that chromium, nickel, and copper can be stripped from zinc-base alloys, aluminum, copper, brass, and steel without etching or pitting of the base metal. Zinc diecastings are stripped cleanly so that they can be rebuffed to a high luster by means of only a wheel wipe.

The company does custom stripping; samples are processed free and quotations are given promptly. The process is not for sale.

E. Machlett & Son, New York, N. Y., makers of laboratory supplies, are offering a precision micrometer-type glass tubing gauge for laboratory use. This gauge embodies a precision micrometer scale with vernier permitting inside measurements from 0.01 to 5 mm. It is highly efficient and absolutely accurate. A needle cap is provided to protect the specially hardened steel needle point. Priced at $8.00.

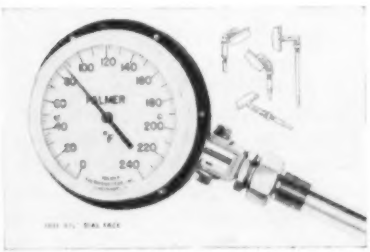
Publications

Sub-miniature Tantalum Capacitors, notable for stability over wide ranges of time and temperature, are announced in Bulletin 6.531, released by Fansteel Metallurgical Corporation, North Chicago, Illinois.

Nine standard capacitors are listed ranging from 30μf at 6 volts d. c. to

3.5 μf at 75 volts d. c. For its capacity ratings, this capacitor is described as the smallest electrolytic capacitor known. Excluding connection leads, it occupies less than 1/10 cubic inch. Bulletin sent on request.

PALMER THERMOMETERS, INCORPORATED, Cincinnati, Ohio, has just released Bulletin 51-129 describing a new mercury-actuated dial thermometer, now available. The thermometer has a 4½" dial face and comes in three



types to suit any requirements: rigid stem, wall mounted, and flush mounted. The stem can be placed at any angle and the case rotated to any readable position. Details on request.

BAIRD ASSOCIATES, INCORPORATED, 33 University Road, Cambridge, Massachusetts, offer Bulletin #35 describing the company's Spectrographic Source Unit, an accessory to the Baird Associates 3-Meter Grating Spectrograph. The new unit, which provides proper spectrographic analysis for the metallurgist, chemist, geologist, etc., contains the three basic circuits (a-c arc, d-c arc, and high voltage spark) which permits the spectroscopist to select conditions which are best suited for his analytical work. Bulletin #32, on Baird Associates 3-Meter Grating Spectrograph, will be included if desired.

KEPCO LABORATORIES, INC., Flushing, New York, have just released, for all users of electronic equipment, new brochures on their Voltage Regulated Power Supply Models 315, 510, 515, and 500 R. Available upon request.

EBERBACH & SON COMPANY, Ann Arbor, Michigan, has issued Bulletin 280 containing new and more comprehensive descriptions of their Di-Electric Constant Meter. The new meter is an easy-to-operate instrument for measuring the dielectric constant of liquids and for demonstrating the principles related to this property. Information regarding procedure and accuracy also included. Requests answered promptly.

RECENT PATENTS

Selected for electrochemists by Fred. W. Dodson, Chairman of the Patent Committee, from the Official Gazette.

January 16, 1951

Francis, V. J., and Nelson, E. H., 2,538,561, High-Pressure Mercury Vapor Lamp

January 23, 1951

Harrington, R. H., Application 18,483, Aluminum-Zirconium Alloy

George, P. F., Application 119,753, Tarnish Resistant Magnesium-Base Alloy Article

Ambrose, P. M., Re. 23,332, Electrolytic Deposition of Manganese

Cutter, P. R., 2,538,831, Coloring of Magnesium and Alloys Thereof

Arbeit, P., 2,538,956, Electric Glass Furnace

Parage, M. A., 2,538,979, Induction Furnace

Trask, H. V., 2,538,990, Electrolytic Process for Producing Iron Products

Trask, H. V., 2,538,991, Process for Producing Brittle Iron Plate

Trask, H. V., 2,538,992, Electrolytically Deposited Iron Products

Wanamaker, E. M., Hammerquist, W. L., and Morgan, W. D. Jr., 2,538,995, Molybdenum Control for Manganese Electrowinning

Grove, C. C., 2,539,074, Electrical Process for Dehydrating Oil

Lovell, W. G., and Phillips, N. E. 2,539,092, Electrolytic Apparatus for Reduction of Aluminum Bromide

Miller, H. D., 2,539,096, Electron Tube and Grid for the Same

Weil, W. M., and Bonsack, W. 2,539,215, Electric Furnace, Including Electromagnetic Pump for Molten Metal

Doty, A. S., and Lynch, W. E. 2,539,298, Electrical Contact of an Internally Oxidized Composition

January 30, 1951

Larson, C. C., 2,539,442, Process of Preparing a Double-Sided Mosaic Electrode

Mazia, J., 2,539,455, Electrolytic Polishing of Metals

Zanetti, A., and Testut, L. C., 2,539,502, Electroplating Anode and Mount

Moy, P. W., 2,539,588, Electrodeposition of Nickel

Yeck, R. P., and Lebedeff, Y. E., 2,539,681, Process for the Electrodeposition of Zinc

Johnson, A. F., 2,539,743, Electrolytic Refining of Impure Aluminum

Tama, M., 2,539,800, Induction Furnace

Steinhoff, E. F., 2,539,873, Method of Making Battery Connections

Cubitt, R. H., 2,539,894, Dry Surface Contact Rectifier Assembly

Davis, J. V., 2,539,898, Electrical Contact Mechanism for Plating Machines

Debeh, A., 2,539,946, Battery

February 6, 1951

Butler, E. M., 2,540,074, Electrolytic Water Correction Device

English, R. H., Ornitz, N. B., and Ornitz, M. N., 2,540,107, High-Temperature Alloys

Lacomble, A. E., Harman, D., and Vaughan, W. E., 2,540,126, Photochemical Hydrobromination of Olefins

Lacomble, A. E., Harman, D., and Vaughan, W. E., 2,540,127, Photochemical Hydrobromination of Olefins

Riley, R. H. Jr., and Holland, T. W., 2,540,174, Battery Testing and Charging Apparatus

Rosenqvist, G., 2,540,175, Manufacture by Electrodeposition

Paget, G. W., 2,540,212, Method of Forming Molds for Casting

Tolman, J. A., 2,540,223, Sterilization of Liquids

Wengel, A. M., and Sadler, L. S., 2,540,225, Cell Testing Apparatus

Downing, R. C., 2,540,248, Manufacture of Fluorine by Electrolysis

Amundsen, P., 2,540,314, Process and Compositions for Applying Phosphate Coatings

Altman, E., 2,540,415, Electric Glass Filament Furnace

Haayman, P. W., Romeyn, F. C., and Verwey, E. J. W., 2,540,446, Accumulator with Electrodes of Graphite Material

Clarke, W. C. Jr., 2,540,509, High-Temperature Stainless Steel

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